

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. An identifier indicating the status of each claim is provided.

Listing of Claims

1. (Withdrawn) A method for manufacturing an austenitic stainless steel characterized by including the following steps of:

injecting fine particle material at high speed into a surface of the austenitic stainless steel for use on member directly contacting with melted metal and melted alloy to remove chromium oxide layer from the surface of the austenitic stainless steel; and

performing nitriding on the austenitic stainless from which the chromium oxide layer is removed at a heating temperature to form a nitride-reformed layer and a passivation film on the surface of the austenitic stainless steel, thereby forming nitride-reforming layer on the surface of the stainless steel and forming a passivation film on an outermost surface of the stainless steel.

2. (Withdrawn) The method for manufacturing austenitic stainless steel of claim 1, wherein the nitride-reformed layer includes chromium and nitrogen as their solid solutions, but excludes chromium compound.

3. (Withdrawn) The method for manufacturing austenitic stainless steel of claim 1, wherein the passivation film is a chromium oxide film.

4. (Withdrawn) The method for manufacturing austenitic stainless steel of claim 1, wherein the nitride-reformed layer has the thickness of 5 to 15 μm .

5. (Withdrawn) The method for manufacturing austenitic stainless steel of claim 1, wherein the steel includes SUS316 stainless steel and SUS304 stainless steel.

6. (Withdrawn) The method for manufacturing austenitic stainless steel of claim 1, wherein the heating temperature is 380 to 430 $^{\circ}\text{C}$, most preferably 420 $^{\circ}\text{C}$.

7. (Withdrawn) The method for manufacturing austenitic stainless steel of claim 1, wherein a period of the nitriding time stays from 15 to 25 hours, most preferably 20 hours.

8. (Currently Amended) A solder-melting tank comprising: ~~characterized in that the tank comprises~~

a solder bath for melting and storing solder, and

~~an immersion type~~ a heater installed in the solder bath;

wherein austenitic stainless steel having a nitride-reformed layer and a passivation film is used on at least a surface of the solder bath where the solder batch contacts the solder;

~~that in the solder bath and the immersion type heater, respectively, wherein austenitic stainless steel having a nitride-reformed layer and a passivation film is used on the surface thereof~~ at least a surface of the heater where the heater contacts the solder; and

~~that the~~wherein the nitride-reformed layer includes chromium and nitrogen as their solid solutions, but excludes chromium compound.

9. (Currently Amended) The solder-melting tank of claim 8, wherein in a duct with nozzle contained in the solder bath and installed in the melted solder, austenitic stainless steel having a nitride-reformed layer and a passivation film is used on ~~the surface thereof~~at least a surface of the duct whether the duct contacts the solder.

10. (Currently Amended) The solder-melting tank of claim 8, wherein in a jet agitation shaft and a jet agitation fin of melted solder, which are installed in the solder bath, austenitic stainless steel having a nitride-reformed layer and a passivation film is used on ~~the surface thereof~~at least a surface of the jet agitation shaft where the jet agitation shaft contacts the solder and at least a surface of the jet agitation fin where the jet agitation fin contacts the solder.

11. (Currently Amended) The solder-melting tank of claim 8, wherein the nitride-reformed ~~layer as layer~~has a thickness of 5 to 15 μm .

12. (Original) The solder-melting tank of claim 8, wherein the passivation film is a chromium oxide film.

13. (Currently Amended) An automatic soldering apparatus comprising:
a solder-melting tank having a solder bath for melting and storing solder and a heater installed in the solder bath,
~~characterized in that in the solder-melting tank, wherein~~ austenitic stainless steel having a nitride-reformed layer and a passivation film is used on ~~the surface thereof~~ at least a surface of the solder-melting tank where the solder-melting tank contacts the solder; and
~~that the~~ wherein the nitride-reformed layer includes chromium and nitrogen as their solid solutions, but excludes chromium compound.
14. (Cancel)
15. (Original) The automatic soldering apparatus of claim 13, wherein the passivation film is a chromium oxide film.

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